

67. **(New)** The isolated nucleic acid of claim 66, wherein the label is selected from the group consisting of: a radiolabel, an enzyme, a fluorescent compound, streptavidin, avidin, biotin, a magnetic moiety, a metal-binding moiety, an antigen moiety and an antibody moiety.

68. **(New)** The nucleic acid of claim 58, wherein the nucleic acid is bound to a solid phase support.

69. **(New)** The nucleic acid of claim 58, wherein the nucleic acid is part of a probe array.

REMARKS

The above amendments enter no new matter. Support for the amendment to claim 46 and new claim 58 can be found throughout the application and is inherent to the teachings of the specification. Support for new claims 58-69 can be found throughout the application (e.g. in previous claims 46-57. Applicants respectfully reserve the right to pursue the scope of the subject matter of the original unamended claims in the future.

Applicants note that their request for continued examination under 37 CFR 1.114, including payment of fee set forth in 37 CFR 1.17(e), has been accepted and prosecution in this application has been reopened and Applicant's submission of new claims 46-57 have been entered while previously allowed claims 35 and 45 have been canceled. Furthermore, Applicants gratefully acknowledge that claims 34, 51 and 52, have been allowed. Accordingly, claims 34 and 46-57 are pending and claims 46-50 and 53-57 stand rejected.

Objections

Oath/Declaration

The Office Action states that the Oath submitted 2/8/02 has been objected to because it adds a new inventor "but fails to comply with any of the requirements of 37 CFR 1.48(a) (1-5)." Accordingly, Applicants have included with this Response: (1) a request to correct the inventorship that sets for the desired inventorship change; (2) a statement from the added inventor Kenneth S. Kornman indicating that the error in inventorship occurred without

deceptive intent on his part; (3) an oath or declaration by the actual inventor(s); (4) the processing fee set forth in § 1.17(i); and (5) the written consent of the assignee. Therefore, Applicants respectfully request reconsideration and withdrawal of the Objection.

Compliance with Sequence Rules

The Office Action states that the application fails to fully comply with the requirements of 37 CFR 1.821(a)(1) and (a)(2). In particular, the Examiner has noted that the sequence of SEQ ID NO: 2 at position 8845 in the paper copy (a G residue) of the Sequence Listing does not match that of the computer readable form (CRF) of the Sequence Listing (where it is listed as a C). Applicants have accordingly had prepared a new sequence listing which is included herein along with directions for its entry. The Examiner is invited to contact Applicant regarding this replacement sequence listing and to further consult John Leguyader with respect to a telephonic conference conducted on January 2, 2003 regarding this matter.

Rejection under 35 USC § 102

The Office Action states that claims 46-50, 53-55 and 57 have been rejected under 35 U.S.C. 102(b) as being anticipated by Adams et al. (Nature 377 (suppl) 3-174) further in view of of Brummet et al. (U.S. Patent No. 5,719,056). In particular, the Office Action states that Adams teaches an expressed sequence tag comprising 55 bases identical to bases 8795-8849 of SEQ ID NO. 2. Applicants respectfully traverse this rejection for the reasons which follow.

First, Applicants respectfully note that Adams et al. (AA362146) teaches a 415 nucleotide sequence of unspecified function or usefulness (see Exhibit A). Furthermore, the alignment of Adams et al. to Applicants' SEQ ID No. 2 nucleotides does not indicate the several inconsistencies in the sequence taught by Adams et al. and that of Applicants' SEQ ID No. 2. For example, there is at least one nucleotide deletion in the Adams sequence relative to that of Applicants' SEQ ID No. 2 as well as one nucleotide base change and one point of sequence ambiguity indicated in Adams by an "N" which aligns with Applicant's position 8850 (see Exhibit B). A second inconsistency occurs at Applicant's position 8714 (a "G" whereas Adams et al. teaches no nucleotide at the corresponding position (see Exhibit B).

Not in acquiescence to the Examiner's rejections, but in order to expedite prosecution, Applicants have amended independent claim 46 to specify a nucleic acid which contains

positions 8845-8850 of SEQ ID NO: 2 (emphasis on amendment added). As noted, Adams et al. does not teach Applicant's "A" nucleotide at position 8850. Accordingly, Adams et al. does not anticipate claim 46, nor any of its dependent claims 47-57. Therefore reconsideration and removal of the rejection is respectfully requested.

Applicant's further note that they have requested entry of new claims 58-69 which specifies a nucleic acid which contains nucleotides 8714-8845 of SEQ ID NO: 2. As noted above, Adams et al. does not teach the "G" nucleotide occurring at position 8714 and, accordingly, does not anticipate new independent claim 58, nor any of its dependent claims 59-69. Therefore entry and allowance of new claims 58-69 is respectfully requested notwithstanding the cited Adams et al. reference.

Rejection under 35 USC § 103

The Office Action further states that claims 46 and 54-56 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Adams et al. in view of Maniatis et al (1982) and Leary et al. ((1983) PNAS USA 80(13): 4045-4049). In particular, the Office Action cites the same 55 base sequence of Adams et al. cited above in the above rejection under 35 USC § 102 in this rejection under 35 U.S.C. 103(a). Applicants respectfully traverse this rejection, in view of the above-proposed claim amendments which obviate the rejection in view of the cited differences between the sequences in Adams et al. and the instant claimed sequences as reflected in the claims as amended. Furthermore, Applicants note that there would be no motivation to perform further experimentation to detect the cited and claimed sequence differences. Accordingly, the cited references do not render the claims as amended obvious under 35 U.S.C. § 103. Still further, the proposed motivation for combining Adams et al. with Maniatis et al. and Leary et al. to generate "libraries of genomic or cDNA sequences, attaching them to solid supports, and screening them by hybridization with radiolabeled versions the incomplete cDNA of Adams" is not credible because the preparation of such libraries is much more easily achieved by existing standard techniques and the Office Action has not presented any particular advantage(s) of performing the cited combination of processes. Moreover, the motivation to pursue the instant claimed sequences cannot be derived from the Applicant's own specification which shows the claimed invention to have unique biological and prognostic significance (see *In re Dow Chem. Co.*, 837 F.2d 469, 473 and *Grain Processing Corp. v. American Maize-Prods. Co.*, 840 F.2d

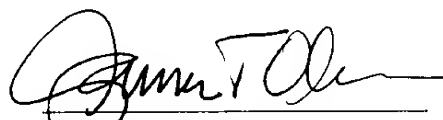
902, 907 (Fed. Cir. 1988)). In particular, there would have been no motivation to pursue the single set of claimed gene sequences from amongst the some 147,472 partial DNA sequences taught by Adams et al. to arrive at the claimed invention. Accordingly, reconsideration and withdrawal of this rejection is respectfully requested.

CONCLUSION

For the foregoing reasons, Applicants respectfully request reconsideration and withdrawal of the pending rejections. Applicants believe that the claims now pending are in condition for allowance, and early notification of such is respectfully requested. If for any reason a telephonic conference with the Applicant would be helpful in expediting prosecution of the instant application, the Examiner is invited to call Applicants' Attorney at (617) 832-1000.

If there are any additional fees in connection with the filing of this Response to Restriction Requirement, please charge the fees to our **Deposit Account No. 06-1448**. Please note that Applicants claim Small Entity Status, and any fees should be charged accordingly.

Respectfully submitted,



James T. Olesen, Ph.D.
Reg. No. 46, 967
Attorney for Applicants

Patent Group
Foley, Hoag LLP
155 Seaport Boulevard
Boston, MA 02210
Tel.: (617) 832-1000
Fax: (617) 832-7000
Dated: January 3, 2003

MARKED-UP VERSION OF CLAIMS PENDING IN MSA-004.01 (09/247874)

The following is a complete set of claims including marked-up versions of those claims amended with this action.

34. An isolated nucleic acid comprising the nucleotide sequence as shown in SEQ ID.No. 2.

46. **(Amended)** An isolated nucleic acid which comprises between about 10 and 7000 consecutive nucleotides of SEQ ID NO:2, wherein said nucleic acid contains positions 8845-8850 of SEQ ID NO: 2.

47. An isolated nucleic acid of claim 46, which comprises between about 15 and 7000 consecutive nucleotides of SEQ ID NO:2.

48. An isolated nucleic acid of claim 46, which comprises between about 20 and 7000 consecutive nucleotides of SEQ ID NO:2.

49. An isolated nucleic acid of claim 46, which comprises between about 25 and 7000 consecutive nucleotides of SEQ ID NO:2.

50. An isolated nucleic acid of claim 46, which comprises between about 30 and 7000 consecutive nucleotides of SEQ ID NO:2.

51. An isolated nucleic acid of claim 46, which comprises between about 100 and 7000 consecutive nucleotides of SEQ ID NO:2.

52. An isolated nucleic acid of claim 46, which comprises between about 5000 and 7000 consecutive nucleotides of SEQ ID NO:2.

53. An isolated nucleic acid that is a complement of the isolated nucleic acid of claim 46.

54. An isolated nucleic acid of claim 46, further comprising a label.

55. The isolated nucleic acid of claim 54, wherein the label is selected from the group consisting of: a radiolabel, an enzyme, a fluorescent compound, streptavidin, avidin, biotin, a magnetic moiety, a metal-binding moiety, an antigen moiety and an antibody moiety.

56. The nucleic acid of claim 46, wherein the nucleic acid is bound to a solid phase support.

57. The nucleic acid of claim 46, wherein the nucleic acid is part of a probe array.

58. **(New)** An isolated nucleic acid which comprises between about 132 and 7000 consecutive nucleotides of SEQ ID NO:2, wherein said nucleic acid contains positions 8714-8845 of SEQ ID NO: 2.

59. **(New)** An isolated nucleic acid of claim 58, which comprises between about 150 and 7000 consecutive nucleotides of SEQ ID NO:2.

60. **(New)** An isolated nucleic acid of claim 58, which comprises between about 200 and 7000 consecutive nucleotides of SEQ ID NO:2.

61. **(New)** An isolated nucleic acid of claim 58, which comprises between about 300 and 7000 consecutive nucleotides of SEQ ID NO:2.

62. **(New)** An isolated nucleic acid of claim 58, which comprises between about 500 and 7000 consecutive nucleotides of SEQ ID NO:2.

63. **(New)** An isolated nucleic acid of claim 58, which comprises between about 1000 and 7000 consecutive nucleotides of SEQ ID NO:2.

64. **(New)** An isolated nucleic acid of claim 58, which comprises between about 5000 and 7000 consecutive nucleotides of SEQ ID NO:2.

65. **(New)** An isolated nucleic acid that is a complement of the isolated nucleic acid of claim 58.

66. **(New)** An isolated nucleic acid of claim 58, further comprising a label.

67. **(New)** The isolated nucleic acid of claim 66, wherein the label is selected from the group consisting of: a radiolabel, an enzyme, a fluorescent compound, streptavidin, avidin, biotin, a magnetic moiety, a metal-binding moiety, an antigen moiety and an antibody moiety.

68. **(New)** The nucleic acid of claim 58, wherein the nucleic acid is bound to a solid phase support.

69. **(New)** The nucleic acid of claim 58, wherein the nucleic acid is part of a probe array.